

App. No. 10/553088
Office Action Dated July 25, 2007

REMARKS

Favorable reconsideration is respectfully requested in view of the following remarks. Applicants respectfully note the discrepancy between the listing of the pending claims in the Office Action Summary and the text of the Office Action. Applicants respectfully note that claims 1-13 and 15-25 are pending.

Claim rejections - 35 U.S.C. § 103

Claims 1-13, 15-18, 22 and 25 are rejected as being unpatentable over JP 2003-213112 (Otomo) in view of U.S. Patent No. 5,112,903 (Sakakibara). Applicants respectfully traverse the rejection.

Claim 1 requires manufacturing a resin composition from a raw material composition containing a polyester resin, a polyolefin resin and a compatibilizer. Claim 1 also requires a kneading step in the presence of moisture. In the kneading step according to claim 1, the kneading is conducted while moisture is added into the raw material composition. Without being bound to theory, the advantages of adding moisture to the raw material composition during the kneading step according to claim 1 are explained as follows. When moisture is present during kneading, reactivity and affinity of the compatibilizer with the polyester resin and the polyolefin resin are increased, whereby alloying can be promoted further. At the same time, the moisture is consumed by the compatibilizer, thereby suppressing the hydrolyzation of the polyester resin. Accordingly, a resin composition with excellent mechanical properties and moldability can be obtained (see page 4, lines 10-18).

Otomo is directed to a regenerated PET resin composition. The method disclosed by Otomo involves using a ground product of a used waste PET product. Otomo teaches mixing the ground product of a PET product, a polyolefin, a block polymer and a multi-layer structure polymer, and then kneading the mixture in a kneading equipment at a temperature from at least the melting point of the polyolefin resin to lower than the melting point of the PET ground product (see paragraphs [0037]-[0038] of Otomo). While the reference teaches that a plasticizer can be added at the time of mixing (see paragraph [0041]), the reference in no way teaches or suggests adding moisture into the raw material composition in the kneading step as required by claim 1, which has been found to increase the reactivity and affinity of the compatibilizer with

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the polyester resin and the polyolefin resin. Therefore, claim 1 and the dependent claims therefrom are patentable over Otomo.

The rejection relies on Sakakibara for the inclusion of water while kneading. The rejection's reliance is misplaced. More particularly, Sakakibara is directed to an article molded from a moisture shrinkable resin. The moisture shrinkable resin of Sakakibara includes a moisture shrinkable polymer, and is shrinkable by absorbing moisture at an ambient temperature of up to 50°C. The reference discloses a method including heating the moisture shrinkable resin, kneading, extruding into a tubular shape by using an extruder and then cooling. The reference also discloses that when kneading, plasticizers such as water, alcohol, urea or the like can be added to the moisture shrinkable resins if necessary. The rejection contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Otomo the use of water during kneading as taught by Sakakibara, in order to introduce water as a plasticizer into the composition since one would have a reasonable expectation of success. However, although Sakakibara indicates that polyethylene terephthalate can be used as a component of the moisture shrinkable resin, the moisture shrinkable resin of Sakakibara does not correspond to Otomo's PET. Specifically, Otomo's PET has a significantly low moisture absorption rate as is apparent from the fact that Otomo's PET is derived from containers for soft drinks and food. Also, when Otomo's PET is heated at 150°C or higher, it reacts with moisture but this reaction is not a shrinkage but a hydrolysis reaction. On the other hand, the moisture shrinkable resin of Sakakibara absorbs moisture and shrinks at a temperature of 50°C or lower. Therefore, it would not have been obvious to the ordinary skilled artisan to combine Otomo and Sakakibara, as the references clearly involve the use of resins with entirely different properties. The components used in the two references thus are not functioning in such a way that their interchange from one system to the other would represent a predictable application of the known function. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references, taken alone or separately.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1-13, 15-18, 22 and 25 are rejected as being unpatentable over Sakakibara in view of Otomo. Applicants respectfully traverse the rejection.

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The moisture shrinkable resin of Sakakibara includes a moisture shrinkable polymer. The reference teaches that the moisture shrinkable polymer can include a thermoplastic polymer and a hydrophilic synthetic polymer. While the reference indicates that polyethylene terephthalate can be used as the thermoplastic polymer, polyethylene terephthalate is mentioned with a rather long list of components that could be used. Nothing in the reference teaches or suggests limiting the raw material composition to a polyester resin, a polyolefin resin and a compatibilizer. Therefore, claim 1 and the dependent claims therefrom are patentable over Sakakibara.

The rejection contends that it would have been obvious to one of ordinary skill in the art at the time of invention to include in Sakakibara the use of the composition of Otomo in order to create a composition which has superior molding and mechanical properties. However, as indicated above, it would not have been obvious to the ordinary skilled artisan to combine Otomo and Sakakibara, as the references clearly involve the use of resins with entirely different properties. The components used in the two references thus are not functioning in such a way that their interchange from one system to the other would represent a predictable application of the known function. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references, taken alone or separately.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

Claims 19, 21, 23 and 24 are rejected as being unpatentable over Otomo and Sakakibara or Sakakibara and Otomo in view of JP 2000-052408 (Taguchi). Applicants respectfully traverse the rejection.

Claim 1 has been distinguished above from Otomo and Sakakibara. Claims 19, 21, 23 and 24 depend from claim 1, and are distinguishable over the references for at least the same reasons. Taguchi does not cure the deficiencies of Otomo and Sakakibara. Therefore, claims 19, 21, 23 and 24 are patentable over Otomo, Sakakibara and Taguchi, taken alone or separately. Applicants do not concede the correctness of the rejection.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

Claim 20 is rejected as being unpatentable over Otomo and Sakakibara or Sakakibara and Otomo in view of JP 2004-195685 (Masadu). Applicants respectfully traverse the rejection.

Claim 1 has been distinguished above from Otomo and Sakakibara. Claim 20 depends from claim 1, and are distinguishable over the references for at least the same reasons. Masadu

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does not cure the deficiencies of Otomo and Sakakibara. Therefore, claim 20 is patentable over Otomo, Sakakibara and Masadu, taken alone or separately. Applicants do not concede the correctness of the rejection.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

In view of the foregoing, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.

Respectfully Submitted,

Dated: October 25, 2007



A handwritten signature in black ink, appearing to be "D. Mueller", written over a horizontal line.

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